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**ABSTRACT**

The invention relates to a method for detecting at least one parameter representative of molecular probes fixed to active zones (3) of a sensor, characterised in that said sensor comprises a network of field-effect transistors (T1, T2...) each of which has a source region (S), a drain region (D) and a gate region which form an active zone (3) on which said representative parameter may be detected, comprising the following steps: a) bringing some of said zones (3) into contact with molecular probes in order to fix the above, b) bathing at least those zones which have been brought into contact with a molecular probe in an electrolyte solution (6) and c) measurement of at least one point on the current curve for the drain voltage, the gate-source voltage and the source-drain for at least two transistors of a first group, corresponding to zones (3), brought into contact with a molecular probe in order to infer at least one said parameter by comparison of at least two of said measurements obtained for two different zones (3).